Telex

Operating Instructions

CE

Echelon
ANR™ 150 Headset

TELEX®

Figure 1

Note: See page 7 for available replacement parts.

General Description

The Echelon ANR 150 is a medium-weight aircraft communications headset. It features electronic noise reduction circuitry for improved reduction of aircraft motor and wind noise. The Echelon ANR 150 also features extended response receivers for improved sound reproduction from the aircraft radio and entertainment system.

The Echelon ANR 150 noise reduction system may be powered from either a battery module or an aircraft power module. The battery module is designed for portable applications and uses one 9 volt battery. Operating time with alkaline batteries is 40 hours minimum. The aircraft power module is designed for permanent installation and provides power to the headset from the aircraft electrical system. The aircraft power module works with negative ground electrical systems.
The Echelon ANR 150 headset features a stereo headphone plug and a stereo/mono select switch. The Echelon ANR 150 can be plugged directly into an aircraft radio for standard monaural communications or into an intercom system wired for stereo entertainment.
FAA TSO C57a and C58a approved.

Design Features (See Figure 1)

Fit and Comfort

A unique headband design distributes ear cushion pressure evenly over the entire ear with no pressure points, unlike conventional designs which apply more pressure on the bottom of the ear than on the top. An added advantage of this design is that the headset folds into an extremely compact shape for storage. A clamp adjustment on each knuckle adjusts to provide greater noise reduction or greater comfort. The earcups pivot on two planes to conform to any wearer. Detented sliders adjust the headband for best fit on any head size. A large head pad evenly distributes the headset weight on the head with no pressure points.

Comfortable foam-filled ear cushions are standard.

Boom Microphone

A flexible gooseneck boom permits precise microphone placement. The boom rotates overhead to use the microphone on either side of the head. The plug-in microphone cartridge features a noise-canceling electret element. The cartridge unsnaps for easy replacement. A built-in microphone amplifier (electret version) operates on current supplied by the aircraft radio via the microphone jack.

Cordage and Plugs

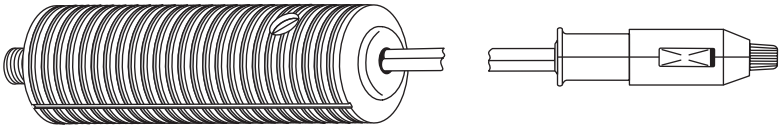
The microphone cordage is protected inside the boom arm. Shielded wire throughout the headset protects against RFI and EMI. Strain-reliefs on all cords provide maximum durability. A separate plug connects the headset to either a battery module or an aircraft power module. The headset also has separate microphone and receiver plugs. The receiver plug is a stereo type, but a selector switch on the cord permits monaural operation.

Microphone Bias Voltage Requirements

The boom microphone requires a bias voltage of 8-16 VDC through 300 to 1000 ohms. If you are uncertain whether your avionics equipment meets this requirement, consult the avionics equipment manufacturer.

Optional Aircraft Power Supply Module

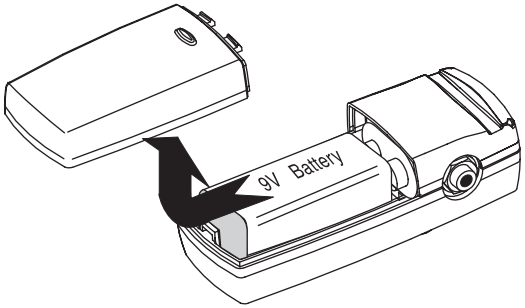
The power supply module is designed for use in negative ground electrical systems only. Do not attempt to use with positive-ground electrical systems.



Installing a Battery in the Optional Battery Module

The battery module requires one 9 volt battery. Alkaline batteries are recommended for best performance. Do not use nickel-cadmium rechargeable batteries or lithium batteries.

1. Slide the battery door over in the direction of the arrow, then up to remove the battery door.
2. Snap the battery onto the battery connector and place the battery into the case.
3. Slide the battery door back into place.



Headset Operation

1. Connect the headset as shown in Figure 2. Set the MONO/STEREO headphone switch to match the type of sound system in your aircraft.

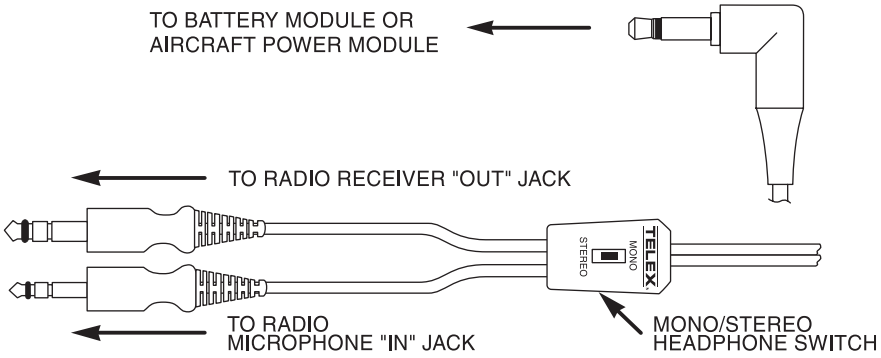


Figure 2. Headset Connection

2. Rotate the entire boom overhead to wear the microphone on either the right or left side of the head.
3. For best noise cancellation, position the microphone as close to the mouth as possible and speak in a normal voice (Figure 4).
4. To activate noise reduction, plug the headset into the battery or power module. To turn off noise reduction, unplug the headset from the battery or power module.
5. With the headband resting securely on the top of the head, check that the ear cups are centered over the ears. Reposition them if necessary by moving the headband sliders out or in. Proper performance depends on proper fit of the headset.
6. Headband Pressure Adjustments:

   There are three pressure settings. Increasing the pressure will improve the seal between the earcup and the head for greater noise reduction. To change the pressure setting, remove the headset and fold the earcup inward as shown in Figure 3, then rotate the adjustment knob to the desired setting. Repeat for both earcups. Both sides of the headband should be set to the same pressure setting to keep the headband properly centered on the head.

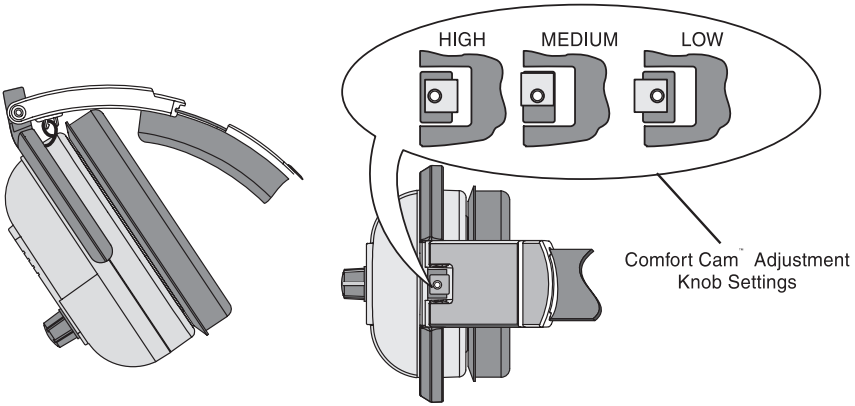


Figure 3. Headband Pressure Adjustment

7. Volume Adjustment Procedure

The following procedure is recommended to assure that there will be sufficient radio volume in the event of a loss of power to the headset.

a. Turn the headset power off.
b. Set the headset volume controls to the middle of their range.
c. **USING THE AIRCRAFT RADIO VOLUME CONTROL**, adjust headphone volume for clear communication under typical operating conditions.
d. Turn on the headset and adjust the volume controls **ON THE HEADSET** to achieve clear communication with noise reduction activated.

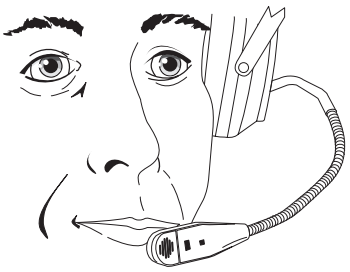


Figure 4. Microphone Placement

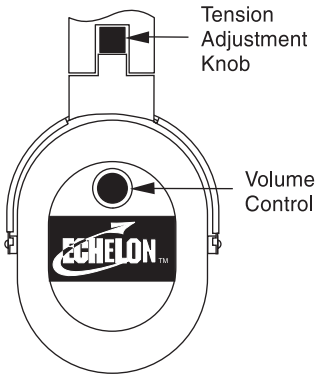


Figure 5. Volume Control

Specifications

Receivers and Noise Reduction Circuits:

Reciever Type: Dynamic

Frequency Response: 50 Hz - 1.5 kHz

Sensitivity (Max. Volume): 95 ± 5 dB SPL (1 kHz, 1 mW input per earcup side)

Impedance (Max. Volume): Stereo: 300 ohms per side, Monaural: 150 ohms

Stereo/Mono: Switch in cord allows Stereo or Monaural headset operation.

Noise Reduction Power Consumption: 50 mW nominal, 1.5W peak per side (dependent on noise level)

Microphone and Amplifier:

Element Type: Noise-canceling amplified electret

Frequency Response: 100 Hz - 5000 Hz

Sensitivity: -51 ±3 dB (ref:1 V/ µbar at 1 kHz with 12 Vdc 150 ohm AC load)

Matching Impedance: 50-600 ohms

Gain Adjustment Range: ± 5 dB (clockwise rotation increases gain)

Operating Voltage (supplied by aircraft radio): 8-16 Vdc

Microphone Interface: Operates from a typical aircraft radio per RTCA DO-170; 8 to 16 Volts DC with 470 ohm DC resistance, 150 ohm AC resistance

Power:

To turn Power on and off simply plug or unplug the battery or Aircraft Power Module.

Batteries: One 9V alkaline battery installed in the battery module.

ANR Battery Life: 40 hours minimum

Fail-Safe Mode:

If battery power is too low for normal ANR operation or if the power module is disconnected, the headset will perform like a standard headset maintaining communications with the aircraft radio.

General:

Cordage: Headset: Straight Y cord, 6 ft (1.8 m),
Aircraft Power Module: Straight cord, 3ft (0.9 m)
Headset Connections:
Power: 3.5 mm 2 conductor right angle plug for connections to the battery module or aircraft power module.
Microphone: 0.206" diameter plug (PJ-068 equivalent)
Receiver: PJ-055 equivalent plug for receivers
Stereo/mono selector switch in the cord
Battery Module Connector:
3.5 mm 2 conductor jack for connection to the headset.
Aircraft Power Module Connectors:
Input power from aircraft: Straight cord, 6 ft (1.8 m) with 12V fused power plug adapter.
Output power to headset: 3.5 mm 2 conductor jack.
Weights:
Headset with foam cushions: 18 oz. (560g)
Battery module with batteries: 3 oz. (85 g)
Aircraft Power Module: 2.2 oz. (62 g)
Color: Black

Ordering Information:

Echelon ANR 150 Headset, with electret mic, battery module, and carrying case	Catalog no. 300714-002
Battery module	Catalog no. 590564-002
Aircraft Power Module	Catalog no. 71046-002
Gel-filled ear cushions (package of 2)	Catalog no. 800027-002
Foam cushions (package of 2)	Catalog no. 800027-003
Headband Pad	Catalog no. 800198-001
Replacement electret microphone	Catalog no. 800136-002
Windscreen (electret)	Catalog no. 800456-000
Model PT-300 Push-to-Talk Switch*	Catalog no. 63966-000
Zippered Pouch	Catalog no. 590061-003
Clothing Clip	Catalog no. 590637-000

* For aircraft without a push-to-talk switch, a portable push-to-talk switch must be used

LIMITED WARRANTY — VALID ONLY IN UNITED STATES AND CANADA

TELEX Communications, Inc. (“Telex”) warrants to the user, who originally purchased the product delivered with this card, that the product will be free from defects in material and workmanship for the following periods after such date of purchase: Material 36 months, workmanship 36 months. Telex will, at its option, repair or replace, free of charge, such defective products subject to the following conditions:

1. Delivery of the product or parts postage prepaid to the Telex dealer, authorized service facility or factory.
2. Determination by Telex that a defect exists and is covered by the limited warranty. Defects due to alteration, repair by an unauthorized person, insertion of non-Telex parts, misuse, accidental damage, use of the equipment for purposes other than those for which it was designed, and the like, are not covered by this limited warranty and repairs thereof will be subject to normal service charges.
3. Repairs and replacement parts are covered under this limited warranty only for the unexpired term of the original limited warranty.
4. Products purchased from unauthorized dealers are not warranted.
5. You must fill out and return the attached registration card within 10 days after such purchase or this limited warranty is void.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHICH EXTENDS BEYOND THE TERM HEREOF. THE REMEDIES PROVIDED BY THIS LIMITED WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON. NO PERSON HAS ANY AUTHORITY TO BIND TELEX TO ANY REPRESENTATION OR WARRANTY OTHER THAN THOSE PROVIDED BY THIS LIMITED WARRANTY. TELEX SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY FAILURE OR OTHERWISE OF THE PRODUCT.

Some states do not allow exclusions or limitations of incidental or consequential damages or limitations on how long an implied warranty lasts, so the limitations or exclusions herein may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

* HEADPHONES/HEADSETS DO NOT HAVE SERIAL NUMBERS ASSIGNED.

CUSTOMER SERVICE

For information or technical assistance, call or write to Telex at:

Customer Service Department
Telex Communications, Inc.
12000 Portland Ave. So.
Burnsville, MN 55337 U.S.A.
(952) 884-4051

When returning equipment for repair, please enclose an explanation of the problem. And, if the equipment is covered under warranty, please enclose a copy of your proof of purchase. The equipment must be accompanied by documentation stating your name, return address, and telephone number.

Return equipment for factory repair to:

Customer Service Department
Telex Communications, Inc.
1720 East 14th St.
Glencoe, MN 55336 U.S.A.
(320) 864-3177

Warranty Repairs - If in warranty, no charge will be made for the repairs. Equipment being returned for warranty repair must be sent prepaid and will be returned prepaid.

Non-Warranty Repairs - Equipment that is not under warranty must be sent prepaid to Telex. If requested, an estimate of repair costs will be issued prior to service. Once your approval for repair, and repair of equipment is completed, the equipment will be returned on a collect basis. Collect charges may be avoided by sending a signed check for payment in full along with your signed estimate approval form (the estimate includes the shipping charge).

Notes

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